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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/516,847
Filing Date: December 03, 2004
Appellant(s): BERKEL VAN, CORNELIS

Hay Yeung Cheung
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 11th, 2010 appealing from the Office action mailed October 13th, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

1-35

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

US 5528002	Katabami	06-1996
US 4695680	Kable	09-1987
US 5889237	Makinwa	03-1999
US 4902858	Yamanami	02-1990
US 6667740	Ely	12-2003
US 5365461	Stein	11-1994
US 5777898	Teterwak	07-1998
US 6204897	Colgan	03-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 4, 9-15, 20-22 and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katabami (US 5,528,002) in view of Kable (US 4,695,680) and further in view of Makinwa (US 5,889,237).

With respect to claim 1, Katabami discloses, a user input system (fig. 10, for example), comprising:

means for (146-7 in fig. 10) generating a alternating magnetic field (145 in fig. 10);

a user-held device comprising a resonant circuit (77 and 78 in fig. 10), means for coupling to ground (4 in fig. 10), and

a conducting tip (3 in fig. 10),

the means for coupling to ground being coupled to a first side of the resonant circuit (top side in fig. 10) and the conducting tip being coupled to a second side of the resonant circuit (bottom in fig. 10), the resonant circuit being operable to provide an alternating voltage (92, 93 in fig. 3b; col. 19, lines 5-15) induced from the alternating magnetic field when positioned in the vicinity of the means for generating an alternating magnetic field (92,93 waveforms are induced as a result of the alternating magnetic field 145 in fig. 10); and

means for sensing an output provided at the conducting tip due to the alternating voltage source when the conducting tip is in the vicinity of the means for sensing an output (3-19 in fig. 1a).

Katabami does not expressly disclose that the means for coupling to ground extend along substantially the length of the user-holdable device nor that the means are a coil.

Kable discloses, a user input system (fig. 1), comprising means for coupling to ground along substantially the length of the user-holdable device (12 in fig. 1; col. 4, lines 11-14, col. 5, lines 32-39).

Kable and Katabami are analogous art because they are both from the same field of invention namely stylus based cursor control.

At the time of the invention it would have been obvious to one of ordinary skill in the art to extend the coupling means of Katabami along the length of the stylus as taught by Kable for the benefit of controlling the signals which may be generated through the hand and body of the user (Kable; col. 5, lines 38-39).

Neither Katabami nor Kable disclose that the means for coupling to ground is a coil.

Makinwa discloses, a coil (202 in fig. 2) is capacitively coupled to ground (ground in fig. 3) via a hand of the user (col. 3, lines 42-44).

Makinwa, Kable and Katabami are analogous art because they are both from the same field of invention namely stylus based cursor control.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the extended coupling means of Katabami and Kable with the coil of Makinwa for the well-known benefit of more stylus design flexibility, and to provide a cheaper, uni-body pen housing.

With respect to claim 2, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Katabami further discloses, wherein the means for sensing an output (8-19 in fig. 1a) provided by the conducting tip comprises means for determining the strength of the output as sensed at plural locations (each location that the electrodes are crossed is sensed) and means for comparing the plural sensed output strengths to determine a position of the conducting tip relative to the plural locations (fig. 1b).

With respect to claim 4, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Katabami further discloses, wherein the sensing means comprises an electric field sensing reception electrode (7 in fig. 1a; for example) and current sensing circuitry (fig. 1b) for determining a current excited in the electric field sensing reception electrode by an electric field generated by the conducting tip (col. 1, line 59-col. 2, line 5).

With respect to claim 9, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Katabami further discloses, wherein the user-holdable device is for use as a pen or stylus (fig. 1).

With respect to claim 10, Katabami, Makinwa and Kable disclose, a system according to claim 9 (see above).

Katabami further discloses, wherein the conducting tip (3 in fig. 1a) is adapted to provide a writing feel to the user (clearly shaped to effectuate a writing feel; in fig. 1a).

With respect to claim 11, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Katabami, when combined with Makinwa and Kable further discloses, wherein the user-holdable device comprises an external housing by which the user is to hold the user-holdable device (5 in fig. 1a), and wherein the coil for coupling to ground is such that the coupling to ground is made via the user's hand (Makinwa; col. 3, lines 42-44) when the user is holding the user-holdable device (Katabami; col. 7, lines 12-18).

With respect to claim 12, Katabami, Makinwa and Kable disclose, a system according to claim 11 (see above).

Katabami, when combined with Makinwa further discloses, wherein the coil for coupling to ground is further arranged to reduce shielding of the resonant circuit from the magnetic field generated by the means for generating an alternating magnetic field (note the location of the coupling to ground in Makinwa away from the resonant circuit in figs. 2-4).

With respect to claim 13, Katabami, Makinwa and Kable disclose, a system according to claim 11 (see above).

Katabami, when combined with Makinwa further discloses, wherein the housing is made of a dielectric material such that the housing represents the dielectric of a capacitor formed between the coil for couple to ground and the user's hand (Makinwa discloses that the coil (202) capacitively couples with the user's hand. This inherently requires a dielectric material to exist between the coil and the user's hand).

With respect to claim 14, Katabami, Makinwa and Kable disclose, a system according to claim 13 (see above).

Katabami, when combined with Makinwa further discloses, wherein the resonant circuit (Katabami; 77, 78 in fig. 10) is positioned in the user-holdable device at a location away from the coil for coupling to ground (Makinwa; fig. 3) (Katabami; clear from fig. 1a; that the resonance circuit is positioned away from the conduction portion).

With respect to claim 15, Katabami, Makinwa and Kable disclose, a system according to claim 12 (see above).

Katabami, when combined with Makinwa further discloses, wherein the user-holdable device further comprises a coil (Katabami; 4 in fig. 3a) for coupling to ground Makinwa; fig. 3) is further arranged to couple the resonant circuit to the user's hand whilst substantially allowing the magnetic field generated by the means for generating an alternating magnetic field to reach the resonant circuit (Katabami; col. 7, lines 12-18) (Makinwa; col. 3, lines 30-44).

With respect to claims 20-22, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Katabami further discloses, an active matrix LCD display device (col. 1, lines 42-44), wherein the sensing means are arranged to sense the output provided by the conducting tip in an area corresponding to a display area of the LCD (col. 3, lines 14-19).

With respect to claim 24, Katabami discloses a user-holdable device for a user to provide input to a user input system (fig. 10; for example), comprising:

a resonant circuit (77 and 78 in fig. 10);

means for coupling to ground (4 in fig. 10); and

a conducting tip (3 in fig. 10);

the means for coupling to ground being coupled to a first side of the resonant circuit (top side in fig. 10) and the conducting tip being coupled to a second side of the resonant circuit (bottom in fig. 10), the resonant circuit (77 and 78 in fig. 10) being operable to provide an alternating voltage (92, 93 in fig. 3b; col. 19, lines 5-15) induced from an alternating magnetic field (92,93 waveforms are induced as a result of the alternating magnetic field 145 in fig. 10).

Katabami does not expressly disclose that the means for coupling to ground extend along substantially the length of the user-holdable device.

Kable discloses, a user input system (fig. 1), comprising means for coupling to ground along substantially the length of the user-holdable device (12 in fig. 1; col. 4, lines 11-14, col. 5, lines 32-39).

Kable and Katabami are analogous art because they are both from the same field of invention namely stylus based cursor control.

At the time of the invention it would have been obvious to one of ordinary skill in the art to extend the coupling means of Katabami along the length of the stylus as taught by Kable for the benefit of controlling the signals which may be generated through the hand and body of the user (Kable; col. 5, lines 38-39).

Neither Katabami nor Kable disclose that the means for coupling to ground is a coil.

Makinwa discloses, a coil (202 in fig. 2) is capacitively coupled to ground (ground in fig. 3) via a hand of the user (col. 3, lines 42-44).

Makinwa, Kable and Katabami are analogous art because they are both from the same field of invention namely stylus based cursor control.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the extended coupling means of Katabami and Kable with the coil of Makinwa for the well-known benefit of more stylus design flexibility, and to provide a cheaper, uni-body pen housing.

With respect to claim 25, Katabami, Kable and Makinwa disclose, a device according to claim 24 (see above).

Katabami further discloses, wherein the user-holdable device is for use as a pen or stylus (fig. 1).

With respect to claim 26, Katabami, Kable and Makinwa disclose, a device according to claim 25 (see above).

Katabami further discloses, wherein the conducting tip (3 in fig. 1a) is adapted to provide a writing feel to the user (clearly shaped to effectuate a writing feel; in fig. 1a).

With respect to claim 27, Katabami, Kable and Makinwa disclose, a device according to claim 24 (see above).

Katabami, when combined with Makinwa further discloses, wherein the user-held device comprises an external housing by which the user is to hold the user-holdable device (Katabami; 5 in fig. 1a), and wherein the coil for coupling to ground is such that

the coupling to ground is made via the user's hand (Makinwa; col. 3, lines 30-44) when the user is holding the user-holdable device (Katabami; col. 7, lines 12-18).

With respect to claim 28, Katabami, Makinwa and Kable disclose, a system according to claim 24 (see above).

Katabami, when combined with Makinwa further discloses, wherein the coil for coupling to ground is further arranged to reduce shielding of the resonant circuit from the magnetic field generated by the means for generating an alternating magnetic field (note the location of the coupling to ground in Makinwa away from the resonant circuit in figs. 2-4).

With respect to claim 29, Katabami, Makinwa and Kable disclose, a system according to claim 27 (see above).

Katabami, when combined with Makinwa further discloses, wherein the housing is made of a dielectric material such that the housing represents the dielectric of a capacitor formed between the coil for couple to ground and the user's hand (Makinwa discloses that the coil (202) capacitively couples with the user's hand. This inherently requires a dielectric material to exist between the coil and the user's hand).

With respect to claim 30, Katabami, Kable and Makinwa disclose, a device according to claim 29 (see above).

Katabami, when combined with Makinwa further discloses, wherein the resonant circuit (Katabami; 77, 78 in fig. 10) is positioned in the user-held device at a location away from the conduction portion (Katabami; 1 in fig. 1a) of the housing (Katabami;

clear from fig. 1a; that the resonance circuit is positioned away from the conduction portion) (Makinwa; discloses the coil for coupling to ground; fig. 3).

With respect to claim 31, Katabami, Makinwa and Kable disclose, a system according to claim 28 (see above).

Katabami, when combined with Makinwa further discloses, wherein the coil for coupling to ground (Makinwa; fig. 3) is further arranged to couple the resonant circuit to the user's hand whilst substantially allowing the magnetic field generated by the means for generating an alternating magnetic field to reach the resonant circuit (Katabami; col. 7, lines 12-18) (Makinwa; col. 3, lines 30-44).

Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katabami (US 5,528,002) in view of Stein et al. (US 5,365,461) and further in view of Kable (US 4,695,680) and Makinwa (US 5,889,237)..

With respect to claim 33, Katabami discloses, a method of sensing user input (5 in fig. 1a), comprising:

generating an alternating magnetic field that passes in to a user-held device (145 in fig. 10);

inducing an alternating voltage in the user-held object from the alternating magnetic field (92, 93 waveforms are induced as a result of the alternating magnetic field 145 in fig. 10);

providing an output from the alternating voltage at a conducting tip (3 in fig. 10) of the user-held device (3992, 93 in fig. 3b; col. 19, lines 5-15); and

sensing the output when the user-held device is positioned such that the conducting tip is in the vicinity of a sensing means (3-19 in fig. 1a; also note fig. 1b).

Katabami does not expressly disclose time-multiplexing or sensing a user's finger.

Stein discloses, sensing, by time-multiplexing (col. 4, lines 52-58), an output when a user-held device (22 in fig. 1) is positioned such that a conducting tip (tip in fig. 1) is in the vicinity of a sensing means (14-17 in fig. 1), or when a user's finger is positioned or moved such that the user's finger is in the vicinity of the sensing means (28 in fig. 1);

wherein said time-multiplexing (col. 4, lines 52-58) provides a means for distinguishing between sensing of the user's finger and sensing of the user-holdable device (col. 4, lines 52-58; figs. 3-4).

Katabami and Stein are analogous art because they are from the same field of endeavor namely touch screen systems using tablets.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the dual stylus and finger sensing means of Stein in the device of Katabami.

The motivation for doing so would have been to allow the user to additionally touch the system thereby providing alternate input means.

Katabami does not expressly disclose that the means for coupling to ground extend along substantially the length of the user-held device nor that the means are a coil.

Kable discloses, a user input system (fig. 1), comprising means for coupling to ground along substantially the length of the user-held device (12 in fig. 1; col. 4, lines 11-14, col. 5, lines 32-39).

Kable, Stein and Katabami are analogous art because they are both from the same field of invention namely stylus based cursor control.

At the time of the invention it would have been obvious to one of ordinary skill in the art to extend the coupling means of Katabami and Stein along the length of the stylus as taught by Kable for the benefit of controlling the signals which may be generated through the hand and body of the user (Kable; col. 5, lines 38-39).

Neither Katabami nor Kable disclose that the means for coupling to ground is a coil.

Makinwa discloses, a coil (202 in fig. 2) is capacitively coupled to ground (ground in fig. 3) via a hand of the user (col. 3, lines 42-44).

Makinwa, Kable, Stein and Katabami are analogous art because they are both from the same field of invention namely stylus based cursor control.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the extended coupling means of Katabami, Stein and Kable with the coil of Makinwa for the well-known benefit of more stylus design flexibility, and to provide a cheaper, uni-body pen housing.

With respect to claim 34, Katabami, Makinwa, Kable and Stein disclose, a system according to claim 33 (see above).

Katabami does not expressly disclose, a resistive sheet.

Stein discloses, wherein the means for sensing the user's finger comprises a resistive sheet (col. 3, lines 42-46) and current measuring means (14-17 in fig. 1) arranged to measure a capacitive current flowing from the conducting tip to the resistive sheet (col. 4, lines 7-14).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the dual stylus and finger sensing means of Stein in the device of Katabami.

The motivation for doing so would have been to allow the user to additionally touch the system to provide input.

With respect to claim 35, Katabami, Makinwa, Kable and Stein disclose, a method according to claim 33 (see above).

Katabami further discloses, wherein the sensing means comprises an electric field sensing reception electrode (7 in fig. 1a; for example) and current sensing circuitry (fig. 1b) for determining a current excited in the electric field sensing reception electrode by an electric field generated by the conducting tip (col. 1, line 59-col. 2, line 5).

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katabami (US 5,528,002) in view of Kable (US 4,695,680) and further in view of Makinwa (US 5,889,237) and Yamanami et al. (US 4,902,858).

With respect to claim 5, Katabami, Makinwa and Kable disclose, a system according to claim 4 (see above).

Neither Kable, Makinwa nor Katabami expressly disclose, wherein the sensing means is arranged to substantially filter out currents produced in the electric field

sensing reception electrode by electric fields generated by the means for generating an alternating magnetic field.

Yamanami discloses, wherein sensing means (fig. 3) are arranged to substantially filter out currents produced in an electric field sensing reception electrode (13 in fig. 3) by electric fields generated by the means for generating an alternating magnetic field (col. 7, lines 26-32)

Yamanami, Kable, Makinwa and Katabami are analogous art because they are from the same field of endeavor namely, stylus based cursor control.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include in Makinwa, Katabami and Kable the filtering means of Yamanami for the well-known benefits of increasing the sensitivity and s/n level of the output signal.

With respect to claim 6, Yamanami, Kable, Makinwa and Katabami disclose, a system according to claim 5 (see above).

Katabami, when combined with Yamanami, Makinwa and Kable, discloses, wherein the filtering out is performed using a difference in phase between the electric field generated by the means for generating an alternating magnetic field and the electric field generated by the conducting tip (Yamanami; col. 7, lines 26-32).

Claims 7-8, 19 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katabami (US 5,528,002) in view of Kable (US 4,695,680) and further in view of Makinwa (US 5,889,237) and Ely et al. (US 6,667,740).

With respect to claim 7, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Neither Kable, Makinwa nor Katabami expressly disclose shielding.

Ely discloses, wherein shielding is provided to substantially block any electric field generated by the means for generating an alternating magnetic field and substantially allow to pass the magnetic field generated by the means for generating an alternating magnetic field (21 in fig. 2; col. 7, lines 31-38).

Ely, Kable, Makinwa and Katabami are analogous art because they are from the same field of endeavor namely stylus based cursor control.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the shielding of Ely in the device of Katabami, Kable, and Makinwa for the benefit of enhancing the sensitivity of the digitizer (Ely; col. 7, lines 35-38).

With respect to claim 8, Katabami, Makinwa and Kable disclose, a system according to claim 4 (see above).

Neither Kable, Makinwa nor Katabami expressly disclose determining the distance between the conducting tip and the electrode.

Ely discloses, the system is arranged to determine the distance of the tip from the plane of the electric field reception electrode, compare the determined distance to a threshold value, and if the determined value is less than or equal to the threshold then treat the conducting tip position as input and if the determined value is greater than the threshold then not treat the conducting tip position as input (Ely; col. 11, lines 22-61).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the distance determination of Ely in the device of Katabami, Makinwa

and Kable for the benefit of detecting stylus movements up and down (Ely; col. 11, lines 22-61).

With respect to claim 19, Katabami and Kable disclose, a system according to claim 1 (see above).

Neither Kable nor Katabami expressly disclose additional user-holdable devices.

Ely discloses a system comprising one or more further user-holdable devices, respective user-holdable devices having different tuned frequencies (col. 23, lines 59-63).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the additional devices of Ely in the system of Katabami and Kable for the well-known benefit of allowing multiple users to interact with the system.

With respect to claim 32, Katabami, Makinwa and Kable disclose, a system according to claim 24 (see above).

Neither Kable, Makinwa nor Katabami expressly disclose additional user-holdable devices.

Ely discloses a system comprising one or more further user-holdable devices, respective user-holdable devices having different tuned frequencies (col. 23, lines 59-63).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the additional devices, each with its own different tuned frequency, of Ely in the system of Katabami, Makinwa, and Kable for the well-known benefit of allowing multiple users to interact with the system.

Claims 3 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katabami (US 5,528,002) in view of Kable (US 4,695,680) and further in view of Makinwa (US 5,889,237) and Stein et al. (US 5,365,461).

With respect to claim 3, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Neither Makinwa, Kable nor Katabami expressly disclose, a resistive sheet.

Stein discloses, wherein the means for sensing the user's finger comprises a resistive sheet (col. 3, lines 42-46) and 33current measuring means (14-17 in fig. 1) arranged to measure a capacitive current flowing from the conducting tip to the resistive sheet (col. 4, lines 7-14).

Katabami, Makinwa, Kable and Stein are analogous art because they are from the same field of endeavor namely touch screen systems using tablets.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the dual stylus and finger sensing means of Stein in the device of Katabami, Makinwa and Kable.

The motivation for doing so would have been to allow the user to additionally touch the system to provide input.

With respect to claim 16, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Neither Kable, Makinwa nor Katabami does not expressly disclose a means for sensing a user's finger.

Stein discloses, a user input device comprising a means for both sensing a user's finger and a stylus (fig. 1).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the dual stylus and finger sensing means of Stein in the device of Katabami, Makinwa and Kable.

The motivation for doing so would have been to allow the user to additionally touch the system to provide input.

With respect to claim 17, Katabami, Kable, Makinwa and Stein disclose, a system according to claim 16 (see above).

Katabami, when combined with Stein, Makinwa and Kable, further discloses, wherein the sensing means comprises a resistive sheet (Stein; col. 3, liens 42-46) and current measuring means (14-17 in fig. 1) arranged to measure a capacitive current flowing from the conducting tip to the resistive sheet (col. 4, lines 7-14), and wherein the means for sensing the user's finger comprises the resistive sheet (Stein; col. 3, lines 42-46), the current measuring means (Stein; 14-17 in fig. 1), and means for distinguishing between sensing of the user's finger and sensing of the user-holdable device (Stein; col. 2, lines 19-21).

Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katabami (US 5,528,002) in view of Kable (US 4,695,680) and further in view of Makinwa (US 5,889,237) and Teterwak (US 5,777,898).

With respect to claim 16, Katabami, Makinwa and Kable disclose, a system according to claim 1 (see above).

Neither Kable, Makinwa nor Katabami expressly disclose a means for sensing a user's finger.

Teterwak discloses, a user input device comprising a means for both sensing a user's finger and a stylus (col. 5, lines 15-21).

Katabami, Kable, Makinwa and Teterwak are analogous art because they are all from the same field of endeavor namely touch screen systems using tablets.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the dual stylus and finger sensing means of Teterwak in the device of Katabami, Makinwa and Kable.

The motivation for doing so would have been to allow the user to additionally touch the system to provide input.

With respect to claim 18, Katabami, Kable, Makinwa and Teterwak disclose, a system according to claim 16 (see above).

Katabami, when combined with Teterwak, Makinwa and Kable, further discloses, wherein the sensing means comprises an electric field sensing reception electrode (Katabami; 7 in fig. 1a; for example) and current sensing circuitry (Katabami; fig. 1b) for determining a current excited in the electric field sensing reception electrode by an electric field generated by the conducting tip (Katabami; col. 1, line 59-col. 2, line 5), and wherein the means for sensing a user's finger comprises an electric field sensing transmission electrode (Teterwak; col. 5, lines 42-46), the electric field sensing reception electrode (Teterwak; col. 5, lines 21-26), and circuitry for sensing changes cause by the user's finger to a current excited in the electric field sensing reception

electrode by an electric field generated by the electric field sensing transmission electrode (Teterwak; 16-19 in fig. 1).

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katabami (US 5,528,002) in view of Kable (US 4,695,680) and further in view of Makinwa (US 5,889,237) and Colgan et al. (US 6,204,897).

With respect to claim 23, Katabami, Makinwa and Kable disclose, a system according to claim 20 (see above).

Neither Kable, Makinwa nor Katabami expressly disclose that the sensing means comprises a resistive sheet and current measuring means, and wherein the resistive sheet is provided by a common electrode of the display device.

Colgan discloses, wherein the sensing means comprises a resistive sheet (201, 203 in fig. 7) and current measuring means (current sense circuitry in fig. 12) arranged to measure a capacitive current flowing from the conducting tip to the resistive sheet, and wherein the resistive sheet is provided by a common electrode of the display device (col. 2, lines 48-52).

Colgan, Kable, Makinwa and Katabami are all analogous art because they are all from the same field of endeavor namely, touch screen design circuitry.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the sensing means of Katabami, Makinwa and Kable with the resistive sheet and current measuring means as taught by Colgan.

The motivation for doing so would have been the well-known benefit of reducing the number of manufacturing steps.

(10) Response to Argument

On page 8 of the Applicant's Appeal Brief, the Applicant argues that the function of Makinwa's stylus is for transmitting a stylus signal and receiving an activation signal. Such a function, argues the Applicant, precludes a finding that the coil provides the function of coupling to ground.

The Examiner respectfully disagrees. Column 3, lines 41-43 of Makinwa's disclosure states, "[b]ecause one side 302 of the coil is capacitively coupled to ground, for example via a hand of the user, an electric signal arises at the side 304 of the coil." While the Examiner agrees that the coil of Makinwa does make it possible to transmit and receive activation signals, this is not the only function of the coil. Were the coil not present in the stylus of Makinwa, there would be no side 302, and thus the stylus would not be capacitively coupled to ground. In short, absent the coil no coupling to ground would occur. Thus it seems clear that the coil is indeed *for* coupling to ground.

On page 9, the Applicant argues that any coupling to ground that is achieved is done so by side 302 which is not a part of the coil 202.

The Examiner respectfully disagrees. For example, consider if the coil 202 is removed, then this in turn removes the "one side 302 of the coil." Therefore the coil 202 must be present for the coupling to ground to be achieved. This would seem to clearly support a finding that it is indeed the coil that allows the stylus to be coupled to ground.

On pages 10-11 of the Appeal Brief the Applicant argues that the combination of the three references would render the stylus unsatisfactory for its intended purpose.

Specifically the Applicant argues that the proposed combination would result in a stylus with a structural wall along the body of the stylus.

It is likely to be beneficial to first examine the proposed combination. Katabami teaches coupling a resonant circuit to ground when a user contacts a conductive portion near the tip. Kable teaches extending the conductive portion substantially the length of the stylus. Thus the combination results in a stylus with a resonant circuit which couples to ground when a user contacts a conductive portion anywhere substantially along the length of the stylus. Makinwa teaches a different method of coupling to ground via capacitively coupling between a user's hand and a coil. Such a combination would replace the conductive portions of Kable and Katabami with the capacitively coupling coil of Makinwa.

Applicant argues that such a combination would result in a stylus with no structural wall. The Examiner respectfully disagrees. For one, Kable provides additional structure underneath the conductive wall, 76 in figure 1 for example. Furthermore it is the Examiner's understanding that the test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art. It is seen as overwhelmingly simple for one of ordinary skill in the art to include a structural body within which to configure all of the elements of the device.

Applicant's arguments with respect to the remaining claims are merely repetitions of the above discussed arguments. As such they are seen as similarly addressed.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/William L Boddie/
Examiner, Art Unit 2629

Conferees:

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629